

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A spark plug comprising:
a main metal fitting having a cylindrical structure;
an insulator disposed inside the cylindrical main metal fitting and having an inner hollow structure;
a center electrode fitted in the inner hollow portion of the insulator in a manner that a front end portion of the center electrode projects outward over one end of the insulator; and
a grounding electrode mounted to the main metal fitting and having one end portion opposing to the front end portion of the center electrode with a discharge gap therebetween,
wherein said front end portion of the center electrode includes a conical portion having a tapered surface and a columnar portion formed to a top end portion of the conical portion, said columnar portion having a diameter in a range of 0.4 mm to 0.8 mm and said tapered surface of the conical portion having a taper angle of less than 80°, and
wherein said columnar portion has an axial length in a range of 0.3 mm to 1.0 mm.

2. (Original) A spark plug according to claim 1, wherein said taper angle is less than 60°.

3. (Original) A spark plug according to claim 1, wherein said taper angle is more than 20°.

Claim 4. (Canceled).

5. (Original) A spark plug according to claim 1, wherein a distance between the tip end of the columnar portion of the center electrode and the projecting end of the insulator is in a range of 1.0 mm to 6.0 mm.

6. (Original) A spark plug according to claim 1, wherein said columnar portion and said conical portion of the center electrode are welded by means of laser.

7. (Original) A spark plug according to claim 1, further comprising a mount screw formed to an outer peripheral portion of the main metal fitting.

8. (Original) A spark plug according to claim 1, wherein said grounding electrode has a single-pole structure.

9. (Original) A spark plug according to claim 1, wherein said columnar portion is formed of iridium alloy.

10. (Currently amended) A spark plug according to claim 1, wherein said conical portion has an outer shape that is linearly tapered along a ~~prescribed by a circle formed by an intersecting line between a circumferential surface of the columnar portion or a surface which is formed by extending the circumferential surface towards the conical portion side and a bottom end portion a conical surface of the conical portion. portion; a circle on a bottom surface side of the conical portion; and a surface not projecting over a conical surface connecting said tow circles.~~